


Parks College of Engineering and Aviation
Saint Louis University

Punit Jain, Senior Associate

History

- Founded in 1927 by Oliver Parks in Cahokia, IL
- First Federally Certified College of Aviation
- Part of Saint Louis University since 1946
- Spring 1995 – Plans to Relocate to Main Campus in St. Louis, MO
- Summer 1997 – Move into the New Building

Programs at Parks

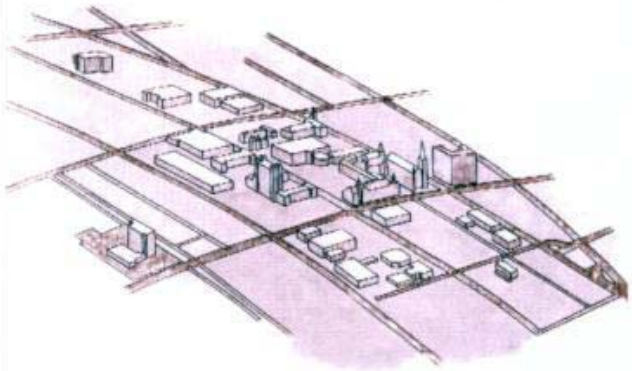
- Aerospace Engineering
- Aircraft Maintenance Engineering
- Aircraft Maintenance Management
- Aviation Science / Professional Pilot
- Aviation Management
- Avionics Engineering
- Biomedical Engineering
- Computer Science
- Electrical Engineering
- Mechanical Engineering

Relocation Benefits

- Interaction with other academic units
- Interesting and necessary mix of technology and liberal arts
- College/University Relations
- Non Duplication of University Services
- Quality/Image of Space
- Cutting Edge Technology

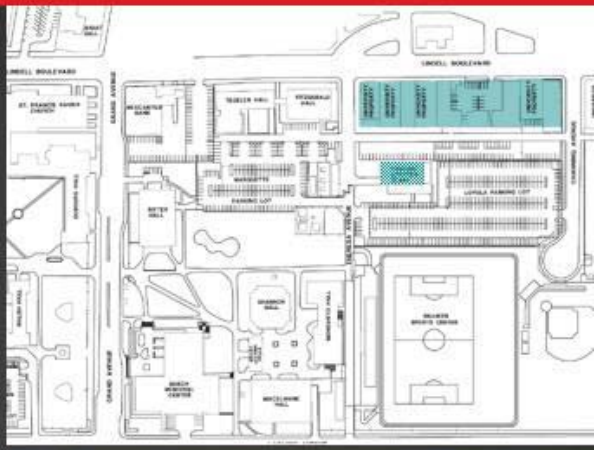
Campus Plan Issues

- Revitalize Midtown
- Reclaim Dormant Space
- Extend Campus Identity
- Establish Boundaries
- Define Green Space
- Create New and Welcoming Parks College Identity
- Plug into the Infrastructure



Building Design Issues

- Dynamic Identity
- Campus Palette
- Technology Center
- Distinctive Processes and Spaces
- Formal and Informal Learning
- Social Interaction Spaces for Innovation
- Efficient Lab Spaces
- Renovate and Integrate Existing Central Utilities Plant



Design Solution

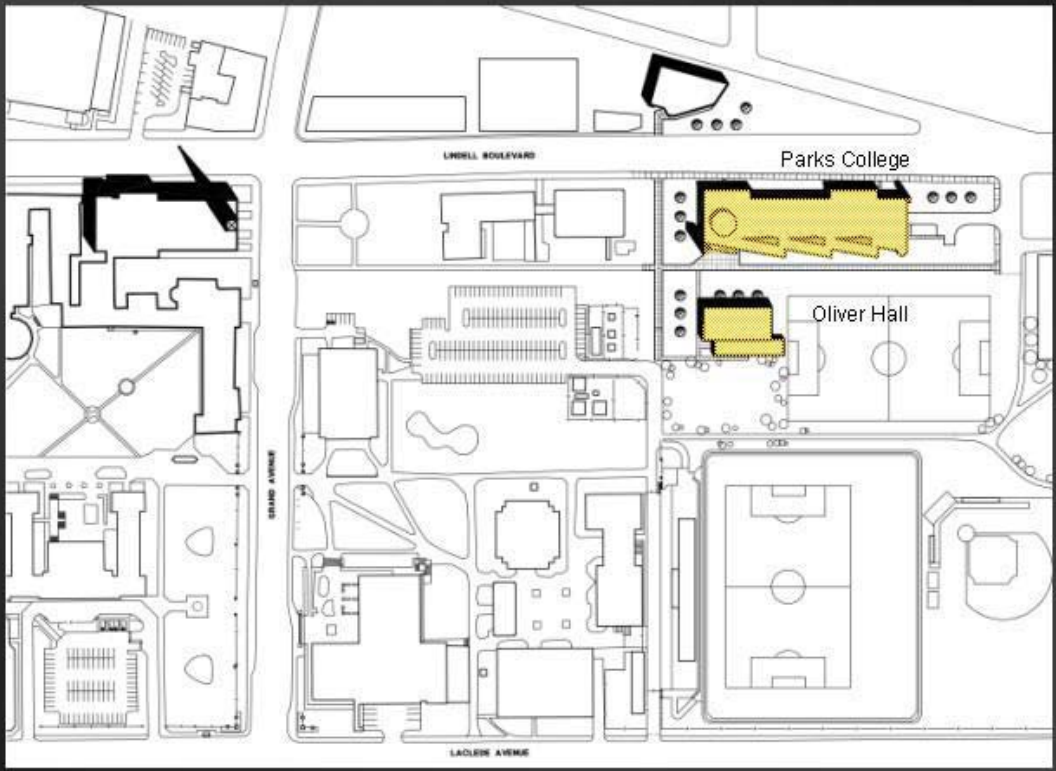
- Enhances the City
- Responds to Urban Needs
- Creates Campus Environment
- Links the Campus
- More efficient operation
- Increased Synergy among students and faculty
- Strengthened academic programs
- Continues the strategy to reclaim the University's urban space

Design Solution

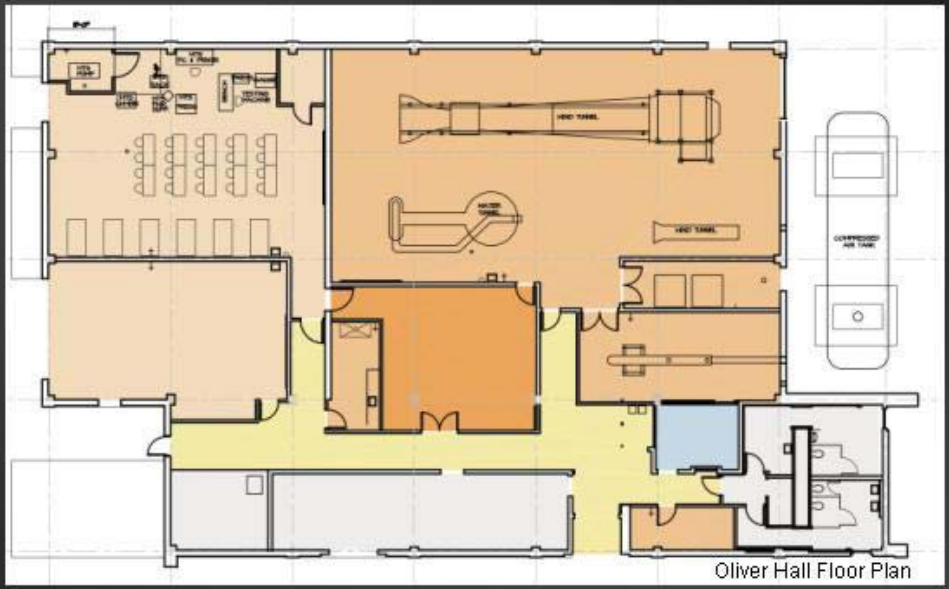
- Aviation Image
- Creative Use of Materials
- Bold Use of Color
- Movement
- Opportunities for Casual Interaction
- Separate Lab and Office Zone
- Cutting Edge Fluid Systems Labs

Benchmark Data

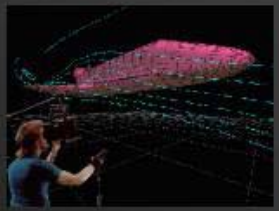
- Completion Date – 1997
- New Area – 87,000 GSF
- Renovated Area – 11,000 GSF
- Building Efficiency – 56%
- Construction Cost - $11 Million
- Cost Per SF - $113.00

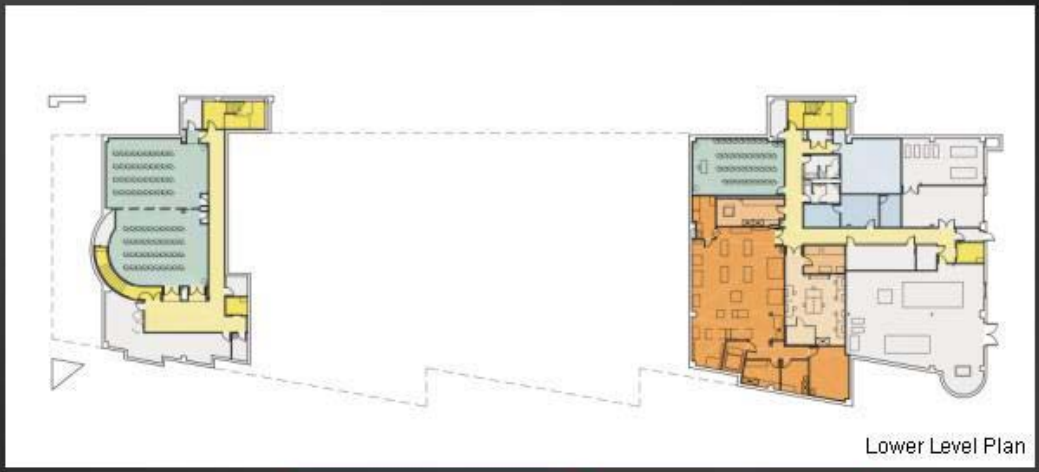

LINDELL BOULEVARD
Parks College
Oliver Hall
LACLEDE AVENUE

Site Plan

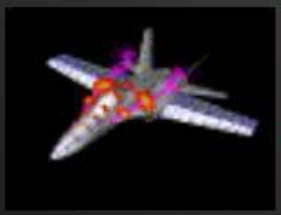


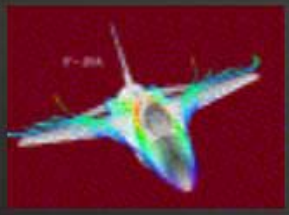
Oliver Hall Floor Plan

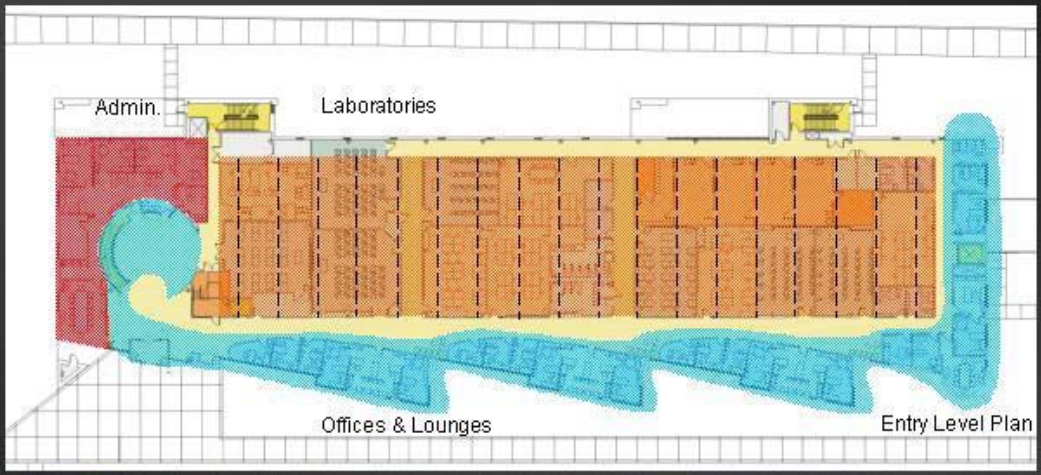




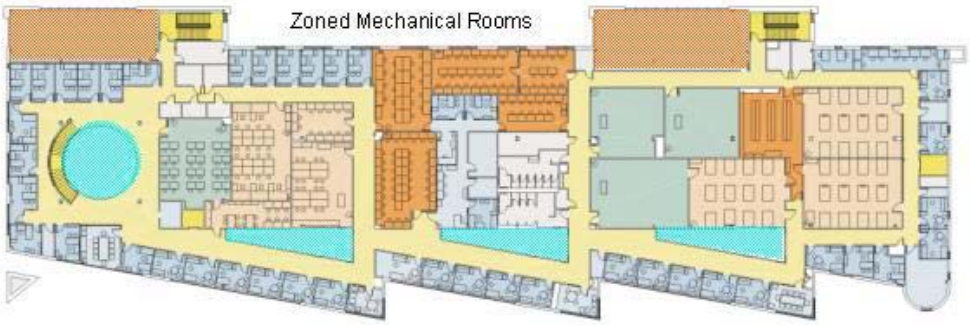
Lower Level Plan






Admin.
Laboratories
Offices & Lounges
Entry Level Plan


HORIZONTAL CIRCULATION
VERTICAL CIRCULATION
CLASSROOM
LABORATORY TEACHING
LABORATORY RESEARCH
LABORATORY SUPPORT
OFFICE
OFFICE SUPPORT
SERVICE


Zoned Mechanical Rooms
Double Height Spaces
Upper Level Plan


HORIZONTAL CIRCULATION
VERTICAL CIRCULATION
CLASSROOM
LABORATORY TEACHING
LABORATORY RESEARCH
LABORATORY SUPPORT
OFFICE
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South West View

Oliver Hall

North East View

Key Components

- Dramatic Entrance Lobby
- Central Circulation Spine
- Interaction Along Circulation
- Science on Display
- Separate Office Zone
- Natural Light into Offices
- Aerodynamics Lab

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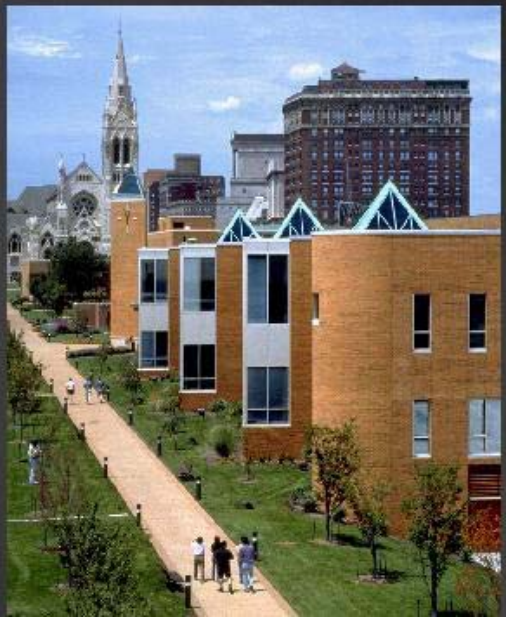

Key Components

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Engineering Systems

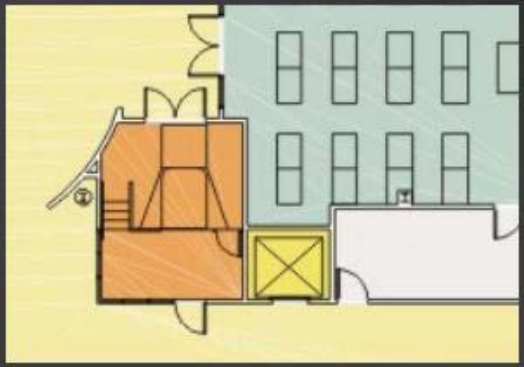
- A/E Integrated Approach
- Zoned Mechanical Rooms
- Centralized Boilers & Chillers
- Decentralized Air Handlers
- Few Vertical Shafts
- Short Duct Runs
- Variable Air Volume
- Variable Flow Pumping
- Variable Frequency Drives

Energy Efficient Strategies

- Natural Light in Offices
- Skylight and Clerestory Light
- Computer Labs in Interior
- North South Orientation
- VAV Systems

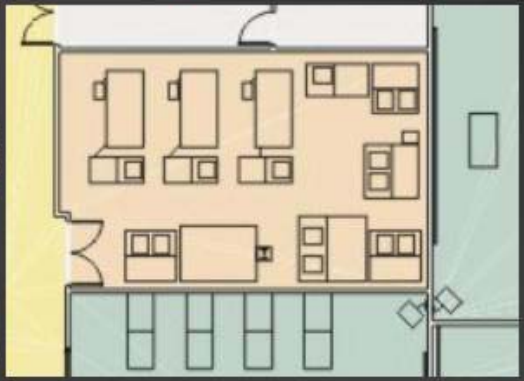
Flight Simulator Lab

- 14' X 18'
- 252 NSF



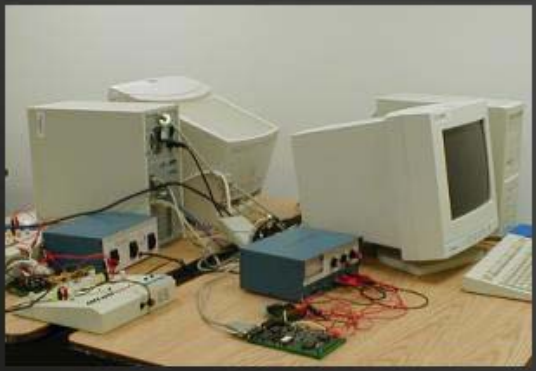
Flight Simulator Lab

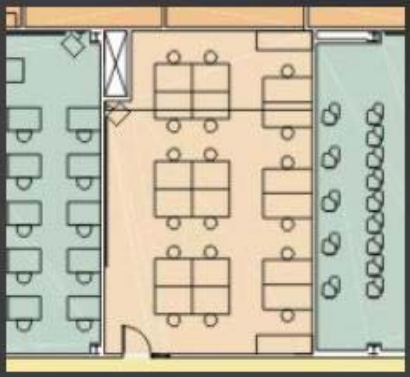
- 34' X 22'
- 748 NSF



Avionics Digital Systems/ Microprocessors Lab

- 34' X 22'
- 748 NSF



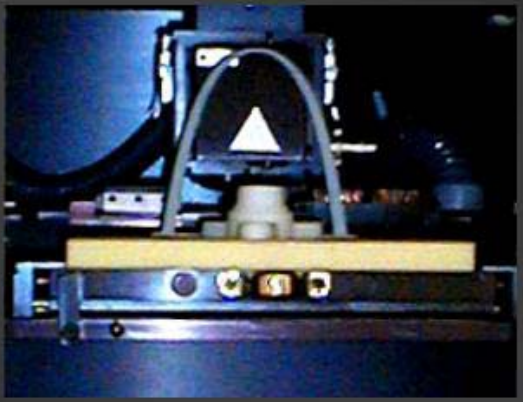


CAD Classroom / Computer Lab

- 33' X 27' = 891 NSF
- 34' X 24' = 816 NSF

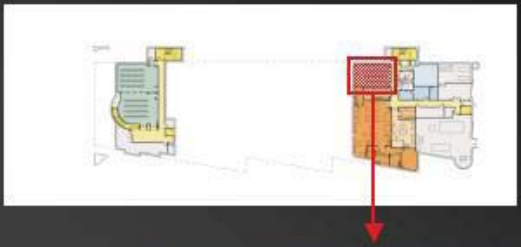
Rapid Prototyping Lab

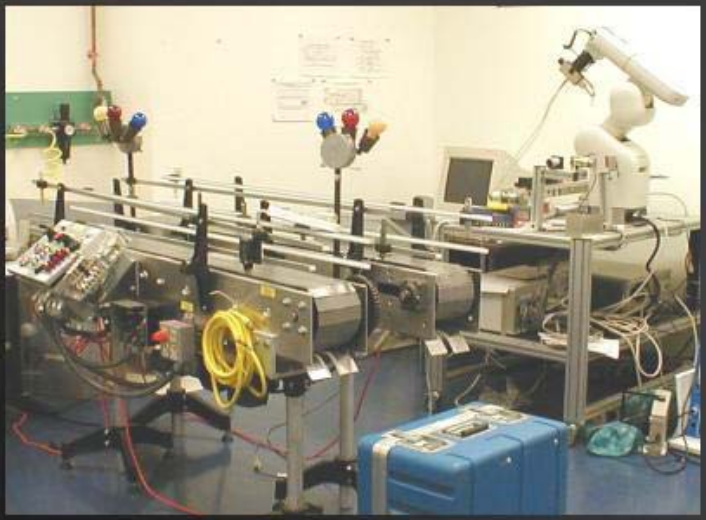
- 11' X 11'
- 121 NSF

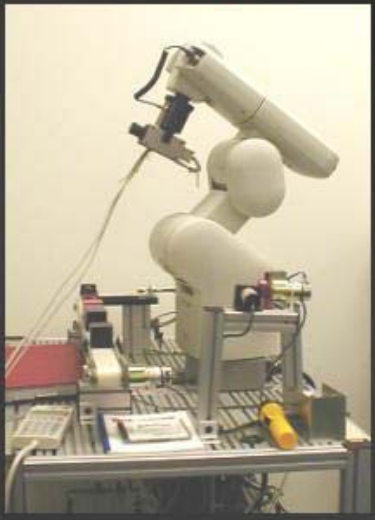


Mechatronics / Robotics Lab

- 36' X 22'
- 792 NSF

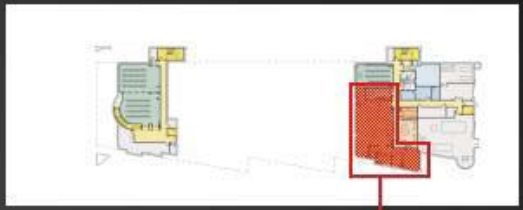






Fabrication Lab

- 2,600 NSF



Composite Layup / Repair Shop

- 38' X 23'
- 874 NSF

Computer Aided Manufacturing Lab

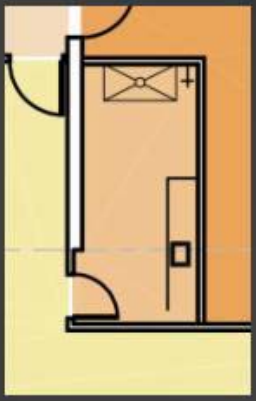
- 40' X 22'
- 880 NSF

Structures / Mechanical Systems Lab

- 45' X 34'
- 1530 NSF

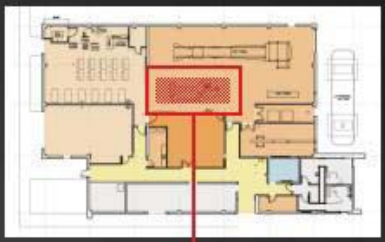
Stress Analysis and Prep Room

- 18' X 8'
- 144 NSF



Thermal and Fluid Systems Lab

- Water Tunnel



Thermal and
Fluid Systems Lab

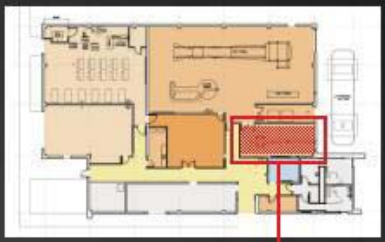
- Large Subsonic Wind Tunnel

Thermal and
Fluid Systems Lab

- Small Subsonic Wind Tunnel

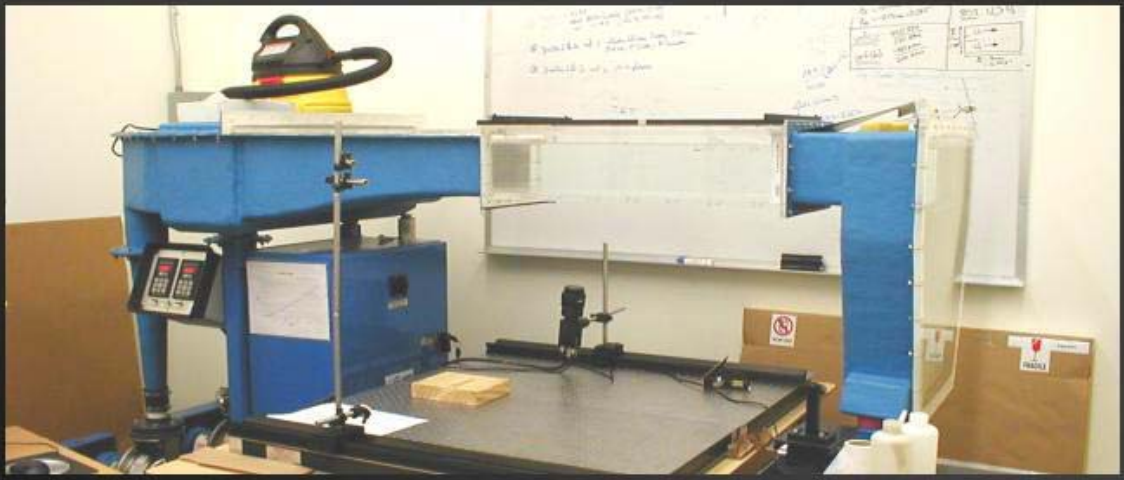
Thermal and
Fluid Systems Lab

- Supersonic Wind Tunnel



Thermal and Fluid Systems Lab

- Shear Water Tunnel



Current Research and Future Directions

- Virtual Wind Tunnels

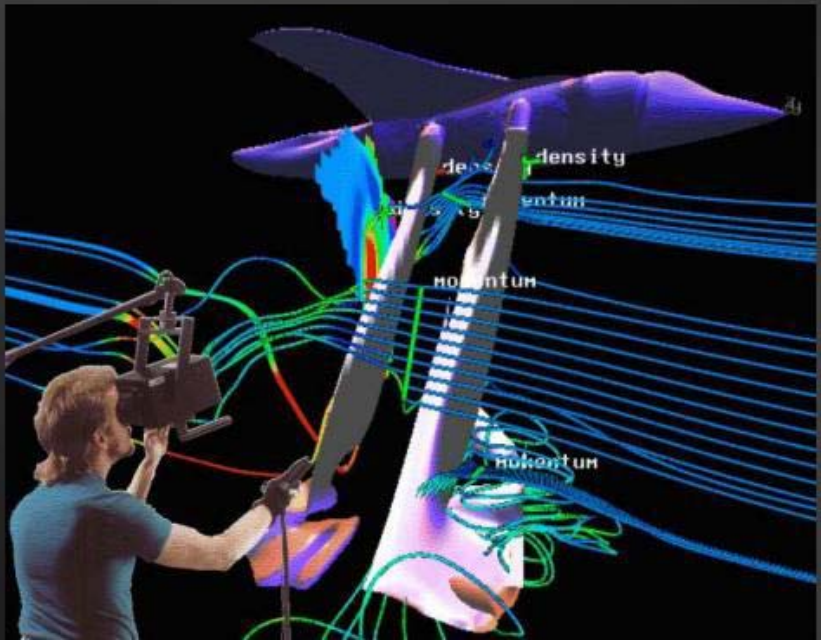


Photo Courtesy: NASA

Current Research and Future Directions

- Virtual Prototyping

Photo Courtesy: NIST Image Gallery

Current Research and Future Directions

- Computer Simulations